

March 7, 2014

Marlene H. Dortch, Secretary
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, DC 20554

VIA ECFS

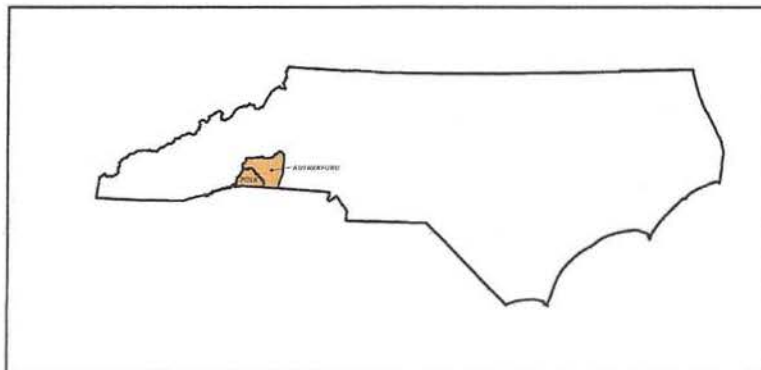
RE: WC Docket No. 10-90
Rural Broadband Experiment Expression of Interest
PANGAEA Internet

Dear Ms. Dortch:

PANGAEA Internet hereby expresses interest in participating in the Commission's rural broadband experiments to provide robust, scalable, high speed broadband to unserved and underserved high cost areas.

Background

E-Polk, Inc dba PANGAEA Internet ("PANGAEA") is a nonprofit 501(C)(3) corporation. Our mission is to deliver affordable, reliable connectivity and services for our region that will enhance economic development, improve the quality of life, and create a broad platform of innovation enabling underserved areas. Since 2003, we utilized almost \$4 million in public and private funding to build a 200 mile fiber optic network in Polk and Rutherford Counties in western North Carolina.



PANGAEA provides high speed bandwidth and transport to 90 customers in our four target markets: 1) health care, 2) education, 3) government, and 4) commercial. Our goal is to utilize this robust fiber infrastructure, our very low nonprofit cost structure, and our strong community partnerships to facilitate the deployment of wireless broadband throughout our two county footprint.

Geographic Territory

Our objective is to deploy wireless broadband technology enabling access to 70- 80% of the population in Polk and Rutherford Counties, NC. These counties are rural with a total population of 88,000 representing an average of only 112 people per square mile. Since 2000, the area has suffered from a

decline in many industries, including the textile, housing and manufacturing sectors and the unemployment rate is 10%. The poverty rate is 16% in Polk County and 20% in Rutherford County and an estimated 3,000 – 4,000 households do not have access to DSL level broadband. Rutherford County is included as a Tier 1 county, which is one of the 40 most distressed counties in North Carolina.

	Polk County	Rutherford County
Population (est. 2012)	20,271	67,323
Median Household Income 08-12	42,762	35,491
Persons Below Poverty Level 08-12	15.7%	20.3%
Land Area-Sq.Mi. 2010	237.79	564.15
Persons Per Sq.Mi. 2010	86.3	120.2

List of Anchor Institutions

PANGAEA has already connected a vast majority of community anchor institutions to our fiber optic network.

Schools (every public school, charter school and community college location)

- Rutherford County Public Schools (1 GBPS between administration building and all 22 school locations)
- Polk County Public Schools (1 GBPS between administration building and all 7 school locations)
- Thomas Jefferson Classical Academy (primary and secondary campuses)
- Lake Lure Classical Academy
- Isothermal Community College (both Polk and Rutherford County campuses)

Libraries

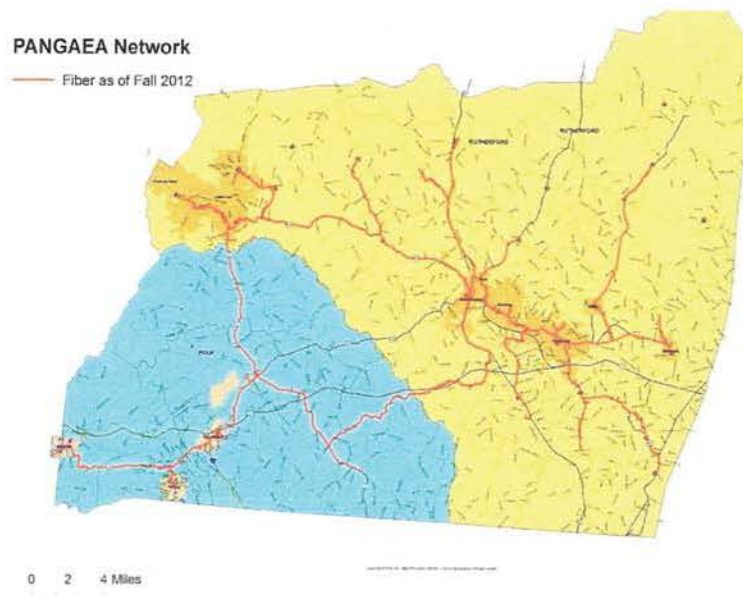
- Polk County Public Library
- Norris Public Library
- Spindale Public Library
- Rutherford County Public Libraries

Healthcare

- St. Luke's Hospital (hospital and 3 off site medical offices)
- Rutherford Regional Health System (hospital and 3 off site medical offices)
- 17 Additional Pharmacies, Community Health Centers, and HealthCare Offices

Government Offices

- Towns of Tryon, Lake Lure, Rutherfordton, Spindale, and Forest City
- Polk County Government (Most Offices, Towers and Fire Stations)
- Rutherford County Government (Most Offices, Towers and Fire Stations)



Proposed Technology

Approximately 50 existing and new communications towers would be utilized to mount sector antennas that utilize 5.8 GHz, 3.65 GHz and 900 MHz to achieve line of sight and non-line of sight broadband coverage (target = 70 – 80% coverage). A powered enclosure would be installed at the base of each tower including battery backup, switching and grounding. Each tower would be fed directly from PANGAEA fiber or via a wireless feed from other network towers. Minimum bandwidth levels of 4 MB download/1 MB upload would be provided to each end user.

State and Local Government Participation

PANGAEA has a strong partnership with both county governments and all municipal governments in our service territory. These partnerships often include agreements for fiber IRUs, space leasing for equipment, fiber maintenance, revenue sharing, utility pole attachments and cost sharing.

Access Points

Through its partnerships, PANGAEA has access to 60 - 70 wireless broadband antenna access points including fire stations, schools, hospitals and towers (water, communications etc.). PANGAEA currently has fiber infrastructure and unlimited bandwidth capability at each access point.

Partner Participation

The following partners have contributed to PANGAEA's capital funding in the past and we are optimistic that additional funding for rural broadband deployment would be strongly considered:

- Advantage West
- NC Department of Commerce
- Golden Leaf Foundation
- Polk County Community Foundation
- Polk County Government
- Rutherford County Government
- Z. Smith Reynolds Foundation
- Facebook

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Existing Providers

DSL and Cable Modem service are not available or oversubscribed in much of the service area. Wireless point to point broadband has been provided to several hundred customers that have line of sight visibility to the nearby mountain peaks. However, rolling foothills and densely wooded areas make line of sight difficult.

The lack of affordable broadband has been highlighted by the Rutherford County Schools "Going G.L.O.B.A.L." program (Growing Learning Opportunities Beyond All Limits). This program issued laptop computers to every student and teacher in grades 6 -12. Approximately 5,000 laptops were issued. However, many students are unable to access lesson plans and do research at home due to the lack of broadband access in the rural areas.

Dependencies

If sufficient capital funding is received, PANGAEA would provide the project management, fiber optic infrastructure and bandwidth for the project. These costs would be very low due to PANGAEA's nonprofit cost structure. We would partner with a wireless broadband service provider who would provide the installation, maintenance and repair functions and offer the broadband service packages. Pricing would be determined by the wireless broadband service provider.

Project Timeline

The project would be a phased 24 - 36 month rollout after a service provider(s) is identified and all tower rights are attained.

Project Cost

We estimate that approximately 50 tower locations would be required to achieve the targeted coverage area. Some towers would be installed on existing buildings (schools, fire stations, government buildings), some on existing towers (communications, water), and some would require new free standing tower construction. We estimate the total capital costs to be \$3.5 - \$4.0 million.

Thank you for considering our *Expression of Interest*.

Sincerely,



Ron Walters
Executive Director